ability of prescription of asthma medications, there appears to be an unmet need and further research is necessary.

PRS61

ECONOMIC EVALUATION OF ENHANCED ASTHMA MANAGEMENT: A SYSTEMATIC REVIEW

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OBJECTIVES: To evaluate, compare, and assess the quality of the studies on the cost-effectiveness of enhanced management (either as adjunct to usual care or alone) *vs.*usual care alone or none at all. **METHODS:** Scientific databases (ScienceDirect, Wiley Online Library, (EbscoHost – MEDLINE, CINAHL, PSYInfo), (OvidSP – EMBASE, MEDLINE), and Scopus) were searched for published journal articles in English language from year 1990 to 2012, using the search terms "asthma AND (intervene OR manage) AND (pharmacoeconomics OR economic evaluation OR cost effectiveness OR cost benefit OR cost utility)". Hand search was done for local publishings. Only studies with full economic evaluation on enhanced management (either as adjunct to usual care or alone) were included. Selected studies were data abstracted and assessed for their quality of economic evaluation using the Quality of Health Economic Studies (QHES) instrument, and quality of evidence. **RESULTS:** A total of 14 studies were included. There were three distinct modes reviewed: environmental control, self-management, education. Most of the enhanced managements were found to be cost-effective with ICER ranged from dominant to $26700.00 per unit of outcome. Overall, the mean score of QHES was 76.69% (SD 9.26). For the quality of evidence, 'clinical effect sizes, adverse events & complication', baseline clinical data, resourse use, and costs components were ranked mainly 1 or 2 (best or nearly best) in all studies. For 'utilities' component, one study ranked 5 because it used visual analogue scale to obtain patient preference values. **CONCLUSIONS:** Despite the low qualities of the reviewed studies, it overall suggests that enhanced management (either as adjunct to usual care or alone) is mostly cost-effective than the usual care or none at all; environmental control is considered the most cost-effective, and there is also strong evidence for self-management, but provided the mode of it is made available, affordable, and accessible then this shall be worth to be adapted in one's setting.

PRS62

ECONOMIC EVALUATION OF THE IMPACT OF NEW TREATMENT ALTERNATIVES ON MARKET DYNAMICS IN RESPIRATORY DISEASES; A CASE STUDY IN TURKISH HEALTH CARE SYSTEM

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OBJECTIVES: Economic evaluation of the change in market dynamics of a sample ProductA[1] through its inclusion in Therapeutic Equivalence Band (TEB) (with products B[2] and C[3]) between 2010 and 2012 in Turkish health care system. **METHODS:** IMS Dataview was analyzed for 2010-2012 unit sales values (market entry timeline for products A, B, C is 2006, 2009 and 2009, respectively) in the TEB. IMS Medical Index is used for estimating prescription data for the corresponding products. Assumptions on median patient adherence (receipt of prescribed treatment in pharmacy) are applied to prescription data in order to calculate unit sales (prediction). Deviation calculations and sensitivity analysis on market dynamics were performed in Microsoft Excel-2007. **RESULTS:** Deviations between unit sales predictions and realizations for products A, B and C occurred as +11.48%, -5.41% and -20.85% in 2010, -10.16%, +8.14% and -53.87% in 2011 and -31.89%, +28.92% and -67.76% in 2012 respectively. Negative deviation values indicate that receipt of prescription cannot be transformed to receipt of the prescribed product in pharmacy, however positive deviation values correspond to receipt of a product in pharmacy which is different from the content of the prescription. **CONCLUSIONS:** The TEB system allows receipt of a different product than prescription. This study shows alteration of market dynamics in pharmacy as a change from prescribed inhaler option (as negative deviation value), which is linked to receipt of another inhaler option (as a positive deviation value) within the same TEB. Real life data may be collected for further analysis of TEB system in dynamics of corresponding market. [1]Originator treatment in TEB-Novartis-Budesonide(400mcg)&Formoterol(12mcg), [2]Second treatment in TEB-Bilim Pharma, [3]Third treatment in TEB-Abdi Ibrahim Pharma.

PRS63

ESTIMATES OF PRICE AND INCOME ELASTICITY IN GREECE: GREEK DEBT CRISIS TRANSFORMING CIGARETTES INTO A LUXURY GOOD

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OBJECTIVES: Greece was long reported to show a smoking prevalence over 40% on adult population, as efforts to constrain smoking were rather ineffective. Following a sharp fall in cigarette consumption for 2012, our objective is to assess smokers' sensitivity to cigarette price and consumer income changes as well as to project health benefits of an additional tax increase. **METHODS:** Analysis includes the conventional model of demand, the myopic addiction model and the rational addiction model. Cigarette consumption for the period 1994-2012 was the dependent variable with Weighted Average Price as a proxy for cigarette price, GDP as a proxy for consumer income and dummy variables reflecting smoking restrictions and antismoking campaigns. Values were computed to natural logarithms and regression was performed. Then, 4 scenarios of tax increase were distinguished in order to calculate potential health benefits. **RESULTS:** Addiction models are unable to provide statistically significant information following a nearly 23.5% drop in consumption during 2012. Short-run price elasticity is estimated at -0.441 and short-run income elasticity is estimated at 1.040. Antismoking campaigns were found to have a statistically significant impact on consumption. Results indicate that, depending on the level of tax increase, annual per capita consumption could fall by up to 607.99 cigarettes; tax revenue could rise by at least €39 million, while up to 595,866 smokers could quit and up to 2,696 smoking related deaths could be averted. **CONCLUSIONS:** Price elasticity estimates are greater than previous studies in Greece and consistent with literature internationally, while income elasticity estimates are far greater. With cigarettes regarded as a luxury good, a great opportunity is presented for decison makers to counter smoking. Increased taxation, along with focused antismoking campaigns, law reinforcement (to ensure compliance with smoking bans) and intensive control for smuggling could inflict a massive blow to the tobacco epidemic in Greece.

PRS64

PREVALENCE OF COMORBIDITIES AMONG CHRONIC COPD PATIENTS IN THE UNITED STATES

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OBJECTIVES: COPD is the third leading cause of death with increasing mortality while other chronic condition mortality rates are decreasing. This may be due to the fact that COPD is a complex chronic condition with a complicated diagnosis and treatment guideline in an aging patient population with increasing comorbid conditions. The objective of this study was to understand the prevalence of comorbid conditions among COPD patients in the US. **METHODS:** A retrospective database analysis was conducted using Marketscan Commercial and Medicare Supplement Data from year 1/1/2010 to 12/31/2011. Patients were included if they had continuous medical and pharmacy benefits coverage for at least 12 months after their first COPD diagnosis defined as primary or ancillary ICD-9 codes of 491.xx, 492.xx, or 496.xx and were between the ages of 40 and 90 years old at the time of diagnosis. Univariate descriptive analyses were conducted to quantify comorbid disease prevalence. **RESULTS:** Among the selected patients (n=231,827), 95.1% (n=220,519) had medical claims (ICD-9 codes) for diagnoses beyond COPD within 12 months of their COPD diagnosis. The majority of patients were over 65 years old (61.4%, n=135,366). Over 60% (n=130,325) of the patients had more than 3 comorbid conditions. The most common were hypertension (64.9%, n=143,189) (ICD-9 codes 401.xx-405.xx, 415, 416, 416.8, 459.1x and 459.3x), hyperlipidemia (46.5%,n=102,498) (ICD-9 code 272.x), diabetes (27.8%, n=61,225) (ICD-9 code 249.xx, 250.xx, 253.5, 271.4, 357.2, 588.1, 790.29), coronary artery disease (27.4%, n=60,364) (ICD-9 code 414.0x, 414.3, 414.4), and asthma (22.7%, n=50,113) (ICD-9 code 493.xx). **CONCLUSIONS:** Our results show the significant prevalence of comorbid conditions among COPD patients. Further research on comorbid conditions impacting COPD patient treatment adherence, COPD pathogenic pathways and worsening overall prognosis are necessary. More evidence is required to estimate the role of comorbidities in COPD.

SYSTEMIC DISORDERS/CONDITIONS – Clinical Outcomes Studies

PSY1

EXAMINING THE BURDEN OF ILLNESS OF VETERAN PATIENTS DIAGNOSED WITH OBESITY IN THE UNITED STATES

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OBJECTIVES: To examine the burden of illness of diagnosed obesity in the U.S. veteran population. **METHODS:** A retrospective database analysis was performed using the Veterans Health Administration (VHA) Medical SAS datasets (01OCT2008-30SEPT2012). Patients diagnosed with obesity were identified (International Classification of Disease 9th Revision Clinical Modification [ICD-9-CM] diagnosis code 278.xx) with the first diagnosis date designated as the index date. A group of patients without obesity but with the same age, region, gender and index year were identified and matched by baseline Charlson Comorbidity Index as a comparator group. The index date for the comparator group was randomly chosen to reduce selection bias. Patients in both groups were required to be at least 18 years old, and have 1 year of continuous medical and pharmacy benefits before and after the index date. Study outcomes, including health care costs and utilizations, were compared between the disease and comparator groups by using 1:1 propensity score matching. **RESULTS:** A total of 1,525,218 patients were identified for the obesity and comparison cohorts. After applying 1:1 matching, a total of 634,257 of patients were included in each group, and the baseline demographic and clinical characteristics were balanced. The obesity cohort had higher percentages of health care utilizations for inpatient (6.21% vs. 2.92%, p<0.01), emergency room (11.96% vs. 7.28%, p<0.01), physician office (99.84% vs. 60.12%, p<0.01), outpatient (99.86% vs. 60.85%, p<0.01), and pharmacy visits (89.01% vs. 61.71%, p<0.01) than the comparator group. Patients diagnosed with obesity also incurred higher expenditures in inpatient ($1,812 vs. $875, p<0.01), emergency room ($117 vs. $69, p<0.01), physician office ($2,936 vs. $1,436, p<0.01), outpatient ($3,288 vs. $1,621) and pharmacy visits ($641 vs. $423, p<0.01) compared to non-obese patients. **CONCLUSIONS:** Study results suggest that patients diagnosed with obesity incurred significantly higher costs and utilizations than non-obese patients.

PSY2

CLINICAL EFFECTIVENESS ANALYSIS OF DEFERASIROX FOR THE TREATMENT OF IRON OVERLOAD DUE TO FREQUENT BLOOD TRANSFUSIONS

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OBJECTIVES: To compare clinical efficacy and safety of orphan drug deferasirox (DSX) versus deferoxamine (DFO) in the treatment of paediatric patients (age ≤ 18 years) with iron overload from repeated blood transfusions. The underlying conditions requiring transfusion included beta-thalassaemia, sickle cell disease and other congenital and acquired anaemias (myelodysplastic syndromes, Diamond-Blackfan syndrome, aplastic anaemia and other very rare anaemias). **METHODS:** We searched CENTRAL, MEDLINE and EMBASE for relevant randomized controlled trials (RCTs) published up to April 2012. The review was conducted in accordance

with the Cochrane Collaboration guidelines and the Polish Agency for Health Technology Assessment recommendations. Calculations were performed using the StatsDirect®2.6.8 statistical package. **RESULTS:** : As a result of the systematic literature search 2 primary RCTs (subtype II A), satisfying the inclusion criteria were found: Cappellini 2006 (patients with beta-thalassaemia) and Vichinsky 2006 (patients with sickle cell disease). The results of the performed analysis proved that once-daily oral deferasirox showed similar efficacy to parenteral deferoxamine therapy in terms of decreased in LIC (liver iron concentration) and SF (serum ferritin). Treatment adherence was similar in both DSX and DFO groups. Safety analysis showed that deferasirox was safe and well-tolerated therapy. The most frequent adverse events in the deferasirox group were diarrhea, nausea, vomiting, abdominal pain and skin rash. In most cases, analysed adverse events were mild and transient. Discontinuation rates were similar in both DSX and DFO arms. **CONCLUSIONS:** Deferasirox represents an important once-daily oral agent for the treatment of chronic iron overload due to blood transfusions. Once-daily oral deferasirox has acceptable tolerability and similar efficacy to parental deferoxamine in reducing iron burden in transfused paediatric patients. Moreover, deferasirox improves patients' quality of life, may improve patient's compliance with treatment and reduces morbidity and mortality from iron overload.

PSY3

META-ANALYSIS OF EFFICACY OF ROMIPLOSTIM FOR TREATMENT OF IMMUNE IDIOPATHIC THROMBOCYTOPENIA

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OBJECTIVES: Immune (idiopathic) thrombocytopenia (ITP) is an autoimmune condition characterized by increased platelet destruction and suboptimal platelet production, resulting in low platelet counts (thrombocytopenia). Romiplostim has shown efficacy in increasing platelet counts. The objective of this study was to conduct meta-analysis and present total evidence for Romiplostim for treatment of ITP. **METHODS:** For this meta-analysis we included randomized controlled trials (RCTs) evaluating Romiplostim for the treatment of ITP. We included RCTs that compared romiplostim versus placebo for management of ITP, had a treatment duration of at least 24 weeks, were doubleblind (patients and investigators blinded) and reported data on platelet response. A systematic literature search for Etanercept trials was undertaken for the databases Pubmed, Embase, Biosis, Google Scholar, and Cochrane. Data was collected for the study size, interventions, year, and the two outcomes overall and durable platelet response rate. For meta-analysis, random effects and fixed effects models were used to obtain cumulative statistics. **RESULTS:** Two RCTs with a total of 125 patients were identified. The pooled response rates for Romiplostim for overall platelet response rate were 82% (95% CI 73%-90%); and for durable platelet response rate were 48% (95% CI 26%-71%). The pooled response rates for placebo for overall platelet response rate were 7% (95% CI 0%-15%), and for durable platelet response rate were 2% (95% CI 0%-4%). For overall platelet response rate the cumulative relative risk with placebo versus Romiplostim was 0.09 (95% CI 4%-14%). For durable platelet response rate, the cumulative relative risk with placebo versus Romiplostim was 0.03 (95% CI 0%-6%). **CONCLUSIONS:** Meta-analysis shows Romiplostim offers patients with Immune idiopathic thrombocytopenia an effective therapeutic option for increasing platelet counts.

PSY4

BIS SENSOR VERSUS CONVENTIONAL ANESTHETIC MONITORING: SYSTEMATIC REVIEW ON PATIENT-ORIENTED OUTCOMES

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OBJECTIVES: Adult patients who receive general anesthesia may not remain totally unconscious during surgery despite of anesthetics and analgesics care received. The retention of memory due to intraoperative awareness may cause serious clinical complications, requiring 1071 patients monitored to prevent the occurrence of one event. The proper conventional maintenance of general anesthesia is assessed with clinical signs or expired gases (ETAC/ETAG/ETCO2). Bi-Spectral Index Monitoring or BIS Sensor is a neurophysiological evaluation system that continually analyzes EEG to determine the level of intraoperative awareness. **METHODS:** We have made a literature search in PubMed to identify systematic reviews and randomized controlled trials that studied level of consciousness intraoperative or postoperative memory when used these alternatives of anesthetic monitoring. **RESULTS:** We have found nine RCT and two systematic reviews published until April 2013 and conducted our own meta-analysis on seven trials. Two studies were excluded from the synthesis for not presenting the outcome of primary interest. Three RCT of moderate heterogeneity showed no difference in the occurrence of intraoperative awareness between the BIS group and the ETAC/ETAG/ETCO2 group. The quality of evidence was considered high in one study, moderate and low in the others (26,490 patients, I2 = 45.9%, RR = 1.28, 95% CI = 0.54 to 3.03, p = 0.57). Four clinical monitoring control group studies with no heterogeneity showed that the sensor BIS was more effective, requiring between 71 and 167 patients monitored for an event of intraoperative awareness avoided. The quality of evidence of the studies was considered high (7,779 patients, I2 = 0.0%, RR = 0.42, 95% CI = 0.27 to 0.65, p = 0, 0.0001). **CONCLUSIONS:** Clinical trials published until April 2013 showed favorable results in patient-oriented outcomes of BIS group when compared to clinical monitoring group but not to ETAC/ETAG/ETCO2 group.

PSY5

MORTALITY AND SURVIVAL IN INOPERABLE OR RESIDUAL/RECURRENT CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION (CTEPH): A SYSTEMATIC LITERATURE REVIEW

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OBJECTIVES: CTEPH is a progressive and commonly fatal disease. A systematic literature review was conducted to synthesize evidence on mortality and survival in patients with inoperable CTEPH or residual/recurrent pulmonary hypertension (PH) after pulmonary endarterectomy (PEA). **METHODS:** Using specific search terms, we systematically searched for MEDLINE- and EMBASE-indexed studies on the epidemiology of CTEPH in various regions (including Western Europe, North America, New Zealand, or Australia) without temporal limits. Among these studies, we identified those that reported mortality and/or survival for patients with inoperable CTEPH or residual/recurrent PH post-PEA. These studies then underwent analytical narrative synthesis. **RESULTS:** In all, 71 articles met the criteria for acceptance into the review. Of these, 21 described mortality or survival in patients with inoperable CTEPH or residual/recurrent PH post-PEA. The proportion of patients with inoperable disease was 27%–41% in seven registries and retrospective studies in Europe. The proportion of patients who underwent PEA was 59%–69% in two Canadian studies and 10%–65% (median 50%) in 11 European studies. Among studies with ≥18 months of follow-up, mortality was higher in patients with inoperable CTEPH (13.4%–58%, with seven of 10 studies reporting mortality rates of 13.3%–21.4%) than among those with residual/recurrent PH post-PEA (7.4% after a mean follow-up of 50 months). Overall survival was lower among patients with inoperable CTEPH than among those with residual/recurrent PH post-PEA. Survival rates for inoperable CTEPH were 73%–93% at one year (10 studies), 41%–88% at three years (nine studies), and 53%–88% at five years (five studies). In contrast, patients with residual/recurrent PH post-PEA had five-year survival rates of 89.9%–100% (three studies). **CONCLUSIONS:** Inoperable CTEPH carries a particularly poor prognosis, with survival rates lower even than those for patients who have residual/recurrent PH following PEA.

PSY6

ANALYSES ADJUSTING FOR SELECTIVE CROSSOVER SHOW IMPROVED OVERALL SURVIVAL WITH DECITABINE COMPARED WITH TREATMENT CHOICE IN DACO-016 PHASE III TRIAL

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OBJECTIVES: Among patients with acute myeloid leukemia (AML), the DACO-016 randomized study showed reduction in mortality for DACOGEN®(decitabine, DAC) compared with treatment choice (TC): at primary analysis the Hazard Ratio (HR) was 0.85 (95% CI: 0.69- 1.04; stratified log-rank p=0.108). With two interim analyses, 2-sided alpha was adjusted to 0.0462. With one year additional follow-up the HR reached 0.82 (nominal p=0.037). These data, together with significant outcomes in secondary endpoints and a positive benefit-risk resulted in approval of DACOGEN in the EU, however not in the US. With the primary analysis only showing a strong trend, the French Haute Autorité de Santé negated a mortality benefit. Though prespecified, the log-rank test could be considered not optimal to assess the observed survival difference because of the non-proportional hazard nature of the survival curves. We applied the Wilcoxon test as a sensitivity analysis. **METHODS:** Patients (age ≥ 65 years, ineligible for chemotherapy) were randomized to DAC (N=242) or TC (N=243). For testing the observed treatment effect, Wilcoxon-test is considered more powerful in the context of non-proportional hazard curves compared to the log-rank test, as the former assigns more weight to earlier events. **RESULTS:** A total of 108 (44.4%) patients in the TC arm and 91 (37.6%) patients in the DAC arm selectively crossed over to subsequent disease modifying therapies at progression, which might impact the survival beyond the median with resultant converging curves (and disproportional hazards). The Wilcoxon-test stratified by baseline age, cytogenetic-risk and ECOG performance status showed a significant improvement in OS with DAC (7.7 [6.2; 9.2] months) versus TC (5.0 [4.3; 6.3] months) (p=0.0456). **CONCLUSIONS:** Wilcoxon-test indicated significant increase in survival for DAC vs TC in patients with AML compared to log-rank test at primary analysis.

SYSTEMIC DISORDERS/CONDITIONS – Cost Studies

PSY7

BUDGET IMPACT ANALYSIS OF DEFERASIROX IN THE TREATMENT OF NON TRANSFUSION DEPENDENT THALASSEMIA IN GREECE

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OBJECTIVES: Deferasirox is an oral iron chelator that has demonstrated efficacy in reducing excess liver iron concentration (LIC) in iron overloaded non-transfusion dependent thalassemia (NTDT) patients. This analysis estimated the budget impact of reimbursing deferasirox in Greece. **METHODS:** An open cohort budget impact model was developed from the Greek health care system perspective over 5 years. Comparators included deferoxamine, deferiprone, and combination therapy (deferoxamine plus deferiprone). NTDT prevalence, drug acquisition and administration costs were from Greece (2013 €). No discounting was applied. Deferasirox clinical inputs were derived from the THALASSA trial. Rate of reduction in LIC (decrease of 26%) was applied each year for deferasirox. This was assumed the same for all comparators. Patients remained on treatment until the 3 mg Fe/gr dw discontinuation threshold for LIC was reached. Treatment was reinitiated when LIC increased above 5 mg Fe/gr dw. Base case starting age was 10 years. Sensitivity analysis was performed on key model inputs. **RESULTS:** A total of 280 patients with NTDT were estimated to be treated with iron chelation per year. With no deferasirox, total drug acquisition and administration costs were € 3,545,406 and € 11,889,133, respectively. With the introduction of deferasirox, acquisition costs increased by 62% to € 5,738,323 and administration costs decreased by 58% to € 4,993,474. Total expenditure decreased by over 30% representing cost savings of € 4,702,742 over 5 years. Results were sensitive to acquisition costs, administration costs for deferoxamine, treatment efficacy and discontinuation threshold. **CONCLUSIONS:** Reimbursement of deferasirox in NTDT resulted in cost savings to the Greek health care system.